

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

I claim:

1. A composite anti-friction bearing structure comprising:
a bearing substrate, and
an anti-friction layer formed by sintering onto said bearing substrate a sintering composition comprised of from 5 wt% to the percolation limit of particles of a hardfacing composition, the balance comprising bronze powder, a lead alloy powder, a tin powder or a tin alloy powder.

2. A composite anti-friction bearing structure as in claim 1, wherein said bearing structure is a bushing, a wear plate, or a wear ring.

3. A composite anti-friction bearing structure as in claim 1, wherein said hardfacing composition comprises from 2-15 wt.% of the sintering composition.

4. A composite anti-friction bearing structure as in claim 1, wherein said particles of hardfacing composition have a number average particle size of from 5 to 200 μm .

5. A composite anti-friction bearing structure as in claim 4, wherein said particles of hardfacing composition have a particle size of from 10 to 60 μm with a mean of 25-30 μm .

6. A composite anti-friction bearing structure as in claim 4, wherein said particles of hardfacing composition have globular shapes.

7. A composite anti-friction bearing structure as in claim 1, wherein said hardfacing composition is an intermetallic hardfacing alloy comprising = 50 wt.% cobalt and = 25 wt% molybdenum.

8. A composite anti-friction bearing structure as in claim 1, wherein said hardfacing composition is comprised of:

Chromium	8.5 wt.%
Carbon	up to a maximum of 0.08 wt.%
Silicon	2.6 wt.%
Molybdenum	28.5 wt.%
Nickel and Iron	jointly up to a maximum of 3 wt.%
with the balance being Cobalt.	

9. A composite anti-friction bearing structure as in claim 1, wherein said hardfacing composition is comprised of:

Cobalt	51.0-53.0 wt.%
Cromium	16.5-17.5 wt.%
Silicon	3.0-3.5 wt.%
Nickel and Iron	3.0 wt.% Max
Molybdenum	27-29 wt.%
Sulfur	.03 wt.% Max
Phosphorus	.03 wt.% Max, and
Carbon	.1 wt.% Max.

10. A composite anti-friction bearing structure as in claim 1, wherein said balance of said sintering composition is comprised of bronze powder.

11. A composite bushing for use in a die set, comprising:
a monolithic steel body having a machined internal cylindrical surface; and

a porous bearing layer on said internal cylindrical surface;
said bearing layer formed by compacting and then sintered in situ on said internal cylindrical surface a sintering composition comprised of from 5 wt% to the percolation limit of particles of a hardfacing composition, the balance comprising bronze, followed by machining, said bearing layer having a thickness of no greater than approximately 0.31 cm.

12. The composite bushing of claim 11, wherein said bronze powder comprises approximately 90% by weight copper and approximately 10% by weight tin.